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Original Research Article

Effectiveness of Nutrition Education on the Knowledge of Primigravida and Multigravida Women about Exclusive Breastfeeding in Urban Slum of New Delhi

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ABSTRACT

Exclusive breastfeeding is considered to be the most effective intervention for preventing child death. The present cross-sectional study was undertaken to assess the existing knowledge of primigravida and multigravida women about exclusive breastfeeding and to study the impact of nutrition education on the same. Differences in the knowledge of primigravida and multigravida women were also assessed about breastfeeding practices. The study was conducted among60 pregnant women (>30 weeks of gestation) including 28 primigravida and 32 multigravida women attending anganwadi centres in urban slums of New Delhi. Participants were selected using purposive sampling technique. The impact of nutrition education on the knowledge level of pregnant women was assessed through a scoring questionnaire. For statistical analysis paired dependent and independent t-test were used. Knowledge about exclusive breastfeeding was found to be insufficient among both primigravida and multigravida women especially among the primigravida women. Significant difference was observed in the knowledge scores of multigravida and primigravida women ($t= -2.476$; $p<0.05$). Nutrition education sessions' using flipbook and video has shown improvement in the knowledge of the pregnant women about exclusive breastfeeding. A significant ($t= -17.8$; $p<0.0001$) difference in the total knowledge scores between pre and post knowledge of pregnant women about exclusive breastfeeding was obtained. Emphasis on providing interactive in-depth nutrition education during antenatal and postnatal period to women will help in improving their knowledge about exclusive breastfeeding and therefore the practices.

Keyword: Exclusive breastfeeding, infant and young child feeding, nutrition education, primigravida women, multigravida women

INTRODUCTION

Good nutrition is important for adequate growth, development and overall well-being during initial years of life. [1] According to 'United Nations Convention on the Rights of the Child' "Every child has the right to good nutrition". [2] Optimal infant and young child feeding (IYCF) includes feeding of children under 2 years of age. It includes practices of early initiation of breastfeeding, exclusive breastfeeding (EBF) and continued breastfeeding along with age appropriate, timely introduction of complementary feeds. [3] Breastfeeding is beneficial not only for the baby, but also for the mother, family and society as well. Approximately 8,23,000 child deaths can be prevented every year by

scaling up breastfeeding. [4] Breastfeeding protects mother from ovarian and breast cancer. It could prevent 20,000 breast cancer related deaths per year among women. [4] Globally, breastfeeding contributesin achieving sustainable development goals. It helps in ending hunger, improving infant and young child nutrition and also promoting overall well-being. [5]

Early initiation of breast feeding (in terms of colostrum feeding) is extremely crucial for successful establishment of lactation. It is recommended to breastfeed baby immediately after birth preferably within 1st hour in case of normal delivery and within 4 hours for complicated delivery. [3, 16] In India, according to National Family Health Survey (NFHS 4), 41.6% of the children under 3 years of age were breastfed within 1 hour of birth, an increment in comparison to NFHS 3 (23.4%). [6,7]

Globally, only 41% of the infants are exclusively breastfed. [8] According to world health organization, exclusive breastfeeding means giving infant only mother's milk or expressed breast milk or from wet nurse (breastfeeding another woman's child). [23,25] No other food or drink, not even water for first 6 months of infant's life should be given. Oral rehydration solution, drops and syrups (vitamins, minerals and medicines) are exceptions which can be given to infant. [9] Exclusive breastfeeding is the most effective intervention for preventing child deaths as non- exclusive breastfeeding in the first six months of life is responsible for 1.4 million (12% of under-5 deaths) child deaths and 44 million global childhood Disability Adjusted Life Years (DALYs). [10] In developing countries like India, liquids and semi-solid foods are introduced earlier, i.e. before six months of age, which showed higher prevalence of malnutrition among infants. [20] According to NFHS 4, more than half of the children under six months of age are exclusively breastfed (54.9%) in India and around half of the children (49.8%) are breastfed in Delhi. [6,11]

Child survival can be improved by planning interventions that work towards promoting and supporting IYCF practices. Literature reports that inadequate confidence in mothers to breastfeed, infants latching or suckling problems to breast and breast pain or soreness are some of the factors behind stopping breastfeeding earlier. Also, perceptions of low milk production and lack of individualized support from their clinician also contributes to the same. [12] Some of the problems of exclusive breastfeeding can be resolved by antenatal counselling. Nutrition education is important and provision of it to expectant mothers, particularly primigravida is essential as it makes them aware about the benefits of breastfeeding and prepares them for early and exclusive breastfeeding (GOI, 2004). [13] Hence, the study was undertaken to assess the existing knowledge of primigravida and multigravida women about exclusive breastfeeding, to study the impact of nutrition education on the same. Also, to assess the differences in the knowledge of primigravida and multigravida women regarding exclusive breastfeeding practices.

MATERIALS AND METHODS

Research design

Cross sectional study

Locale

The study was undertaken among primigravida and multigravida women (>30 weeks of gestation) residing in urban slums, attending Anganwadi centre in South Delhi.

Sample selection

Detailed information about study was provided to participants before conducting the study. Subjects were informed about the study and consent was taken from those who were willing to participate. Purposive sampling technique was used. The sample of this study consisted of 60 pregnant women (>30 weeks of gestation).

Inclusion criteria

- Pregnant women (>30 weeks of gestation) be it primigravida or multigravida.

Exclusion criteria

- Pregnant women <30 weeks of gestation.
- Those who are not willing to participate.
- Any medical condition during pregnancy.
- Pregnant women not likely to deliver in South Delhi.

Ethical clearance

Ethical clearance was taken from Institutional Ethical committee of Lady Irwin College, University of Delhi.

Period of investigation

The data was collected between October 2013 and February 2014.

Operational definitions

1. **Infant-** Infancy is the period from 0-12 months of age.
2. **Exclusive breastfeeding-** It means that the infant receives only breast milk for first6 months. No other food or drink, not even water for first 6 months of infant's life should be given. Oral rehydration solution, drops and syrups (vitamins, minerals and medicines) are exceptions which can be given to infant. [9]
3. **Primigravida women-** The term refers to women in her first pregnancy. [17,18]
4. **Multigravida women-** The term refers to women with previous experience of giving birth to babies. [17, 18]
5. **Nutrition education-** A combination of educational strategies, accompanied by environmental supports, designed to facilitate voluntary adoption of food choices and other food and nutrition related behaviour conducive to health and wellbeing and delivered through multiple venues, involving activities at the individual, institutional, community and policy levels. [19]

Tools and Techniques

Pretested questionnaires were used to elicit information about participant's socio-demographic profile, obstetric details, sources of IYCF information and knowledge about exclusive breastfeeding. Scoring was done on the basis of correctness of answers. Knowledge scores were classified as very poor (≤ 20%), poor (20.1-40%), average (40.1-60%), good (60.1-80%) and very good (≥ 80.1%). After obtaining information about knowledge related to EBF from the participants, one to one nutrition education session was conducted with each pregnant woman.

Nutrition education was provided through pre-developed information, education and communication (IEC) materials from Breastfeeding Promotion Network of India (BPNI). BPNI works towards protection, promotion and supporting breastfeeding and appropriate complementary feeding of infant and young children. [25] The IEC materials include a flipbook on breastfeeding and complementary feeding and a video emphasizing on importance of breastfeeding. One session of nutrition education was conducted which was of 40-45 minutes duration. In the nutrition education session, firstly video was shown to all pregnant women and later key messages related to exclusive breastfeeding were discussed with the help of a flipbook. At the end, all messages about benefits and importance of breastfeeding were summarized and repeated again by both researcher and the participant. Same pregnant women were followed up after their delivery for post knowledge assessment.

Statistical analysis

Data were entered into the Microsoft excel spreadsheet and analysed using SPSS software version 20.0. For qualitative data, frequencies and percentages were used and for the quantitative data, mean and standard deviation were used. Paired dependent and independent t-test was used. A statistical significance was considered at $P<0.05$.

RESULTS

The study sample consisted of 60 pregnant women (>30 weeks of gestation) residing in urban slums of South Delhi. The

age range of the pregnant women varied from 18-36 years (Table 1).

Table 1: Socio demographic data of the participants

Variable	Primigravida (n=28) n(%)	Multigravida (n=32) n(%)
Age (years)		
<20	3(10.7)	1(3.1)
21-25	19(67.9)	12(37.5)
26-30	5(17.9)	11(34.4)
31-35	1(3.5)	7(21.9)
>36	0(0)	1(3.1)
Educational Qualification		
Illiterate	4(14.4)	7(21.9)
Primary	3(10.7)	6(18.8)
Secondary	9(32.1)	10(31.2)
Higher Secondary	2(7.1)	5(15.6)
Graduate	8(28.6)	4(12.5)
Post Graduate	2(7.1)	0(0)
Family type		
Nuclear	5(17.9)	18(56.2)
Joint	23(82.1)	14(43.8)
Women engaged in any occupation		
Yes	2(7.1)	1(3.1)
No	26(92.9)	31(96.9)
Current pregnancy status		
First time	28(100)	0(0)
Second time	0(0)	16(50)
Third time	0(0)	12(37.5)
Fourth time	0(0)	3(9.4)
Fifth time	0(0)	1(3.1)

Among sixty respondents, 47% of the women were primigravida and 53% were multigravida. More than three fourth (84%) of multigravida women had institutional delivery. All pregnant women had undergone more than 3 antenatal checkups. Out of the total participants, only 20% pregnant women received counselling on breastfeeding. This was majorly from the doctors in Government hospital, dispensary and from anganwadi workers. The major (51.7%) source of IYCF information was television.

More than 90% of pregnant women were aware about the fact that breast milk should be given to infants. Around sixty one percent (60.7%) of the primigravida and multigravida (59.4%)women did not knew about benefits of giving breast milk to the baby as assessed from pre-knowledge scores (Table 2).

Table 2: Pre and post knowledge scores of primigravida and multigravida women about importance of mother's milk to infants

Importance of mother's milk to baby	Primigravida women (n=28)		Multigravida women (n=32)	
	Pre knowledge* n (%)	Post knowledge* n (%)	Pre knowledge* n (%)	Post knowledge*n (%)
Good for baby's health	3(10.7)	8(28.6)	2(6.3)	12(37.5)
Contain all nutrients	6(21.4)	6(21.4)	3(9.4)	8(25)
Easily digestible	0(0)	1(3.6)	0(0)	0(0)
Protect infant from diseases	1(3.6)	12(42.9)	9(28.1)	15(46.9)
Good for development of infant	0(0)	1(3.6)	1(3.1)	1(3.1)
All of the above	0(0)	1(3.6)	0(0)	1(3.1)
Do not know	17(60.7)	4(14.3)	19(59.4)	2(6.3)

**Multiple responses*

More than half (57.1%) of the primigravida and around one third (31.2%) of the multigravida women did not knew about the beneficial effects of breastfeeding for mothers. Only few primigravida (10.7%) and multigravida women (15.6%) knew that breastfeeding helps in loosing extra weight gained during pregnancy. Also, that nursing mothers has less chances of developing breast related problems (primigravida- 25% and multigravida women-40.6%). Post intervention knowledge scores showed

improvement in knowledge levels of both primigravida and multigravida women as breastfeeding is beneficial not only for baby but also for the mother.

About fifty six percent of multigravida women knew that breastfeeding should be initiated within half to one hour of birth in comparison to primigravida women (21.4%). Post knowledge assessment score on the same was 100% (Figure 1).

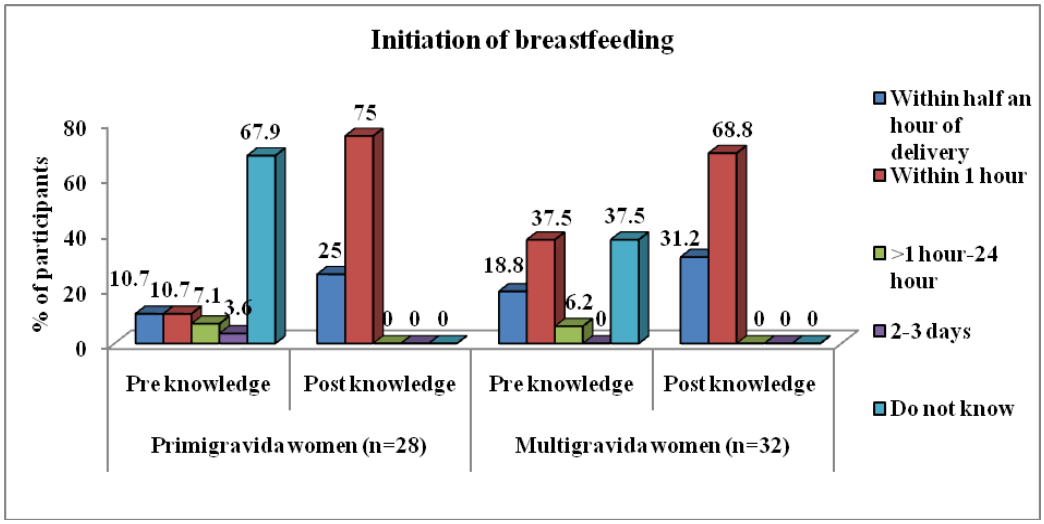

Figure 1: Pre and post knowledge scores of primigravida and multigravida women about initiation of breastfeeding

Feeding colostrum to neonate was not known by around half (46.4%) of the primigravida and multigravida (21.9%) women. More than half of the multigravida women (62.5%) and primigravida women (32.2%) knew that thick yellow, dark coloured milk is important and should be fed to newborn after birth as it contains all nutrients, protects babies from illnesses and is good for their health.

Maximum pregnant women (78%) knew that exclusive breastfeeding should be done for first six months. Seventy five percent primigravida and about eighty one percent of multigravida women were aware about exclusive breastfeeding. Giving pre-lacteal feeds like *ghutti*, honey etc. to neonate is considered a ritual in India. In the study, it was observed that all multigravida women knew about it and agreed (81.2%) that it should be given to neonates. More than one third (39.2%) of the primigravida women did not knew about it. Around half (43.8%) of the multigravida and less than one fourth of primigravida women (21.4%) believed in giving water to infant before 6 months of age. The most common reason stated was "during summer time infants do feel thirsty like us, adults, therefore given water".

One fourth of the primigravida women knew frequency of breastfeeding to be "on demand" in comparison to more than half of multigravida women (62.5%). After post intervention the response was increased to 89.3% and 87.5% in case of primigravida and multigravida women respectively. Majority (78.6%) of primigravida women were not aware about duration of breastfeed, some (14.3%) had stated it to be of 5-10 minutes duration as compared to multigravida (40.6%).

More than half (53.6%) of the primigravida women were not aware about the exact duration of breastfeeding for infant and young children. Around sixty percent (59.4%) of the multigravida women were aware that the breastfeeding should be done till 2 years or beyond. Most of the pregnant women (primigravida-57.2%; multigravida-62.5%) responded not to breastfeed baby during mother's illness like cough and cold whereas 21.4% of the primigravida women did not have any idea about it. When asked

about continuation of breastfeeding during baby's illness, more than half of the primigravida (53.6%) and multigravida women (81.3%) knew about it. Around fifty three percent of the multigravida women were aware about breastfeeding during diarrhoea and the fact (53.1%) that those babies who receive breast milk are less prone to get diarrhoea in comparison to primigravida women (71.4%).

Thirty two percent of the primigravida women got average pre-knowledge scores to a good score of 68%after the intervention. Multigravida women (19%) had pre-knowledge scores between 60.1 to 80% which was increased to 59% in post knowledge scores (figure 2). A significant (t= −17.8; p<0.0001) difference in pre and post knowledge scores of all pregnant women about exclusive breastfeeding was obtained. From this it can be interpreted that there was improvement in the knowledge levels of pregnant women, after nutrition education session.

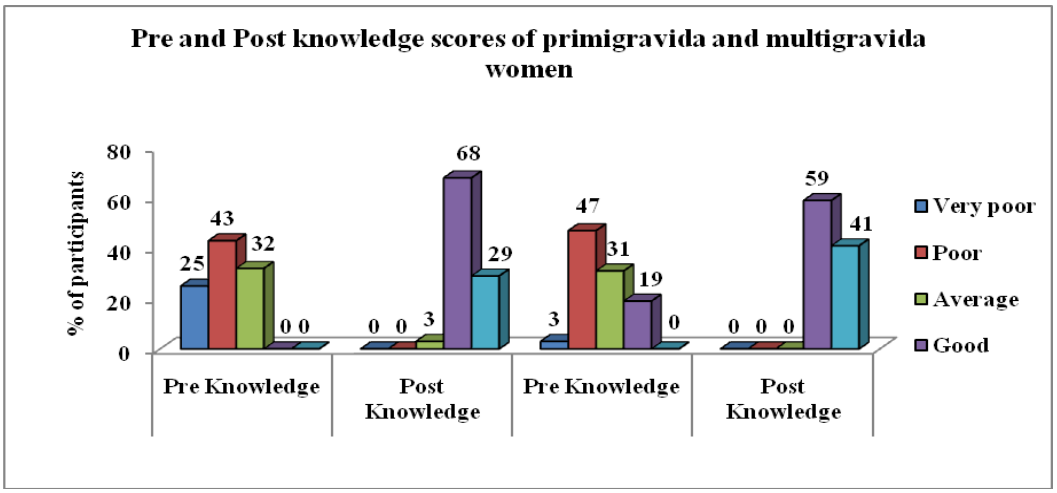

Figure 2: Total pre and post knowledge scores of primigravida and multigravida women

It is generally believed that women with previous pregnancy experiences would have more knowledge about breastfeeding in comparison to that of women becoming mother for the first time. Significant difference was observed in the scores of knowledge of multigravida women in comparison to primigravida women (t=−2.476; p<0.05) (Table 3).

Table 3: Independent t test for knowledge scores of primigravida and multigravida women

	Pre test	Post test
	Mean ± Standard deviation	
Primigravida	11.86±5.0	28.18±2.9
Multigravida	15.31±5.7	28.56±2.7
t-test	−2.476*	0.5226

*Mean values are significantly different at p<0.05

DISCUSSIONS

The average age of study participants were 25.9±4.44 years. More than fifty percent (60.7%) of the primigravida and multigravida (59.4%) women were not aware about benefits of breast milk to the baby, the results of the current study are similar to a cross-sectional study that was conducted in post-natal ward of rural hospital in Maharashtra (χ^2=4.1). [14]

About fifty six percent of multigravida and twenty one percent of primigravida women knew the fact that breastfeeding should be initiated within half to one hour of birth. Majority of the multigravida women (62.5%) were aware of the fact that colostrum should be fed to newborn after birth in comparison to less number of primigravida women (32.2%). The results of the current study are in contrast to a study that was conducted at ante-natal clinic of Karad district, Satara, Maharashtra where a higher percent of response (72.2%) was reported among primigravida women. [22] Most of the primigravida (75%) and multigravida

(81.2%) women knew about duration of exclusive breastfeeding. The finding of the study is in accordance with various cross-sectional studies where more than half of the primigravida women were aware about it. [15,21, 22]

Before nutrition education session, more than three-fourth (78.6%) of the primigravida women did not know about duration of breastfeed. Similar finding (76%) was reported in a descriptive, cross sectional study conducted in Nagpur, Maharashtra among primigravida women attending antenatal care OPD or admitted to the ward or labour room in tertiary care rural hospital. [15] In the study significant difference in the knowledge scores of primigravida and multigravida women about exclusive breastfeeding were observed. Similar significant association between mothers gravidity and their knowledge about breastfeeding ($r = 0.1827$ and $P < 0.001$) was noted in a cross-sectional study conducted in Iran. [21]

CONCLUSION

Pre knowledge assessment revealed gaps in knowledge level of both primigravida and multigravida women. Statistically significant improvement was reported in the knowledge level of pregnant women after nutrition education intervention. Focus on one-to-one antenatal and postnatal counselling are required as maximum pregnant women especially primigravida women do not know anything about initiation of breastfeeding, importance of colostrum feeding, duration and frequency of breastfeeding. Promotion and support of exclusive breastfeeding through reinforcement of nutrition education interventions using multi-media channels can be effective in improving the knowledge and therefore practices of exclusive breastfeeding by the women.

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List of acronyms:

BPNI- Breastfeeding Promotion Network of India
EBF- Exclusive Breastfeeding
ICDS- Integrated Child Development Scheme
IEC-Information, Education and Communication
IYCF-Infant and Young Child Feeding
NCT- National Capital Territory
NFHS- National Family Health Survey
OPD-Out Patient Department
SPSS- Statistical Package for the Social Sciences

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